



Post Bariatric Surgery Abdominoplasty and Thigh Lift

Essay

Submitted for the Partial Fulfillment of Master Degree
in General Surgery

By □

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2016**

Abstract

Background: Obesity is a major health problem worldwide and has reached an epidemic proportion in the Western society. Evidence continues to accumulate that obesity is a major risk factor for many diseases and is associated with significant morbidity and mortality.

Aims: The aim of this study is to review the different surgical modalities used for abdominoplasty and thigh lift in patients suffering from skin laxity and redundancy following bariatric surgery.

Methodology: The universal definitions of overweight and obesity have been established using body mass index (BMI equal kilograms of body weight/height [m²] squared). For adults a BMI between 25 and 29.9 is considered overweight and a BMI of 30 or greater is defined as obese.

As a result of the obesity pandemic, more and more individual are seeking bariatric surgery for weight loss and resolution of conditions related to obesity. As the numbers have risen to greater than 200,000 cases per year, the number of post-bariatric massive weight loss patients presenting to the plastic surgeon for body contouring to address excess skin laxity is increasing.

Conclusion: Postoperative care and follow up is very important to avoid some complications which are common with these operations like seroma, wound dehiscence and thromboembolism. Subsequently, with an increase in number of successful weight loss patients, contouring of all regions of the body after bariatric surgery is growing in frequency and is rapidly undergoing modification and refinement growing to a new specialty.

Keywords: Post Bariatric Surgery, Abdominoplasty, Thigh Lift, skin laxity, bariatric surgery



ACKNOWLEDGEMENT

First, thanks are all due to Allah for Blessing this work until it has reached its end, as a part of his generous help throughout our life.

My profound thanks and deep appreciation to Prof. Dr. Ali Bahgat Lasheen, Professor of General Surgery, Ain Shams University for his great support and advice, his valuable remarks that gave me the confidence and encouragement to fulfill this work,

I am also thankful to Prof. Dr. Ashraf Farouk Abadeer, Professor of General Surgery, Faculty of Medicine, Ain Shams University for his valuable supervision, co-operation and direction that extended throughout this work,

Also I'm deeply grateful to Dr. Ehab Hussein Abd El-wahab, Assistant Professor of General Surgery, Faculty of Medicine- Ain Shams University, for his valuable help, assistance, encouragement and supporting me through devoting her time to facilitate the production of this work,

I want also to thank my family for supporting me throughout my life.



Muhammad Musalam Bendary

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List of Abbreviations

<i>Abbreviation</i>	<i>Meaning</i>
ACCP	: American College of Chest Physicians
ASIS	: Anterior superior iliac spine
BMI	: Body mass index
BPD	: Biliopancreatic diversion
CT	: Computer tomography
DVT	: Deep Vein Thrombosis
FDL	: Fleur De Lys
GERD	: Gastroesophageal reflux disease
GI	: Gastrointestinal
HLT	: High lateral tension abdominoplasty
MMP	: Matrix Metalloproteinase
MWL	: Massive weight loss
PE	: Pulmonary Embolism
SFS	: Superficial fascial system
TIMP	: Tissue inhibitors of metalloproteinase
UGI	: Upper gastrointestinal

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Introduction

Obesity is a major health problem worldwide and has reached an epidemic proportion in the Western society. Evidence continues to accumulate that obesity is a major risk factor for many diseases and is associated with significant morbidity and mortality **(Delaney et al., 2013)**.

The universal definitions of overweight and obesity have been established using body mass index (BMI; kilograms of body weight/height [m^2] squared). For adults a BMI between 25 and 29.9 is considered overweight, whereas a BMI of 30 or greater is defined as obese **(Edelstein, 2014)**.

Diet, exercise, and behavioral modification should be included in all obesity management approaches for body mass index (BMI) of 25 kg/m^2 or higher. Other tools, such as pharmacotherapy for BMI of 27 kg/m^2 or higher with comorbidity or BMI over 30 kg/m^2 and bariatric surgery for BMI of 35 kg/m^2 with comorbidity or BMI over 40 kg/m^2 , should be used as adjuncts to behavioral modification to reduce food intake and increase physical activity when this is possible **(Apovian et al., 2015)**.

As a result of the obesity pandemic, more and more individual are seeking bariatric surgery for weight loss and

resolution of conditions related to obesity. As the numbers have risen to greater than 200,000 cases per year, the number of post-bariatric massive weight loss patients presenting to the plastic surgeon for body contouring to address excess skin laxity is increasing **(Rubin, 2014)**.

After the massive weight loss following bariatric surgery, about 90% of patients tend to display the negative effects secondary to the large amount of redundant skin **(Neff et al., 2013)**.

In addition to the aesthetic problems, this leads to functional problems, dermatoses and difficulties in carrying on personal hygiene **(Hng et al., 2012)**.

The treatment of redundant skin is a necessary and essential step to improve the quality of life of patients after bariatric surgery. Nevertheless, there is clinical evidence on the differences in the healing and recovery processes of patients with massive weight loss after bariatric surgery **(Aldaqa et al., 2013)**.

Patient expectations must be assessed at the initial patient consultation. Generally, post bariatric surgery patients want the procedure immediately; they want perfect results, no downtime, and no risks **(Gusenoff et al., 2008)**.

Thus, patients have to be informed that body - contouring procedures are complex and labor-intensive, with big scars, long recovery times, and common wound healing complications **(Michaels et al., 2011)**.

Staging for a massive weight loss patient desiring total body contouring includes, firstly, lower body lift including breast or arm procedures, followed by medial thigh, and upper back surgery. Facial rejuvenation procedures are performed last **(Coon et al., 2010)**.

Abdominoplasty deals with the excess abdominal pannus and scars of the abdominal wall and may be used to correct diastasis of the rectus muscles and sometimes the looseness of the external oblique muscles **(Di Giuseppe et al., 2015)**.

Thigh is one of the most complex regions to address in massive weight loss patients because of differing degree, location and quality of skin excess and fatty tissue, as well as surgical risk factors **(Shermak et al., 2009)**.

Subsequently, with an increase in number of successful weight loss patients, contouring of all regions of the body after bariatric surgery is growing in frequency and is rapidly undergoing modification and refinement growing to a new specialty in plastic surgery **(Atiyeh et al., 2012)**.

Aim of the Work

The aim of this study is to review the different surgical modalities used for abdominoplasty and thigh lift in patients suffering from skin laxity and redundancy following bariatric surgery.

Anatomy of the Anterior Abdominal Wall and Thigh

The anterior abdominal wall confines abdominal viscera, stretches to accommodate the expanding uterus, and provides surgical access to the internal reproductive organs (**Gary, 2010**).

Layers of anterior abdominal wall

The abdominal wall is a layered structure, consisting of skin, subcutaneous fat, fascia, muscle layer, transversalis fascia and the peritoneum (**Gary, 2010**).

Skin

The skin is loosely attached to underlying structures except at umbilicus. At umbilicus it is attached firmly with scar tissue. The skin of anterior abdominal wall has great capacity to stretch so as to accommodate pregnancy, ascites and huge ventral hernias. Langer's lines are the natural tension lines of strain due to pattern of collagen fibre bundles in the dermis. These are permanent lines and run in abdominal wall downwards, forewards and almost horizontal in middle of the trunk (**Nigam et al., 2009**).

Langer lines describe the orientation of dermal fibers within the skin. In the anterior abdominal wall, they are arranged transversely. As a result, vertical skin incisions sustain increased lateral tension and thus, in general, develop wider scars. In contrast, low transverse incisions, such as the Pfannenstiel, follow Langer lines and lead to superior cosmetic results **(Ellis, 2006)**.

Fascia of the anterior abdominal wall

This layer can be separated into a superficial, predominantly fatty layer “Camper’s fascia”, and a deeper, more membranous layer “Scarpa’s fascia”. These are not discrete layers but instead represent a continuum of the subcutaneous tissue layer **(Rozen, 2008)**.

Camper’s fascia is named after Pieter Camper (1722-1789). Professor of Botany, Anatomy and Surgery, Groningen, The Netherlands. It extends upwards in anterior abdominal wall and down to perineum over thigh, buttocks and scrotum. It is continuous in other parts of body except penis as there is no fat in penis and scrotum as it is replaced by dartos muscle **(Nigam et al., 2009)**.

Scarpa’s fascia is named after Antonio Scarpa (1747-1832). Professor of Anatomy in Padua, Italy. It is a thin membranous layer. It extends from abdominal wall to